

Appl. No. 10/091/983
Amdt. dated 09/05/2005
Reply to Office action of 08/12/2005

REMARKS/ARGUMENTS

Reconsideration is requested of all rejections based on 35 U.S.C. 103:

Examiner is thanked for his ongoing response in which he now argues as follows:

(1) Examiner states "...features on which applicant relies (i.e., annealing in the same chamber as the nitridation process) are not recited in the rejected claim(s)."

While it is correct that annealing in the same chamber as the nitridation process is not recited in any of our claims, it is not correct to state that the present invention relies on this feature. If Examiner continues to contend that this is the case, we request that he please indicate where we have stated or implied that, for the present invention to work, annealing and nitridation must take place in the same chamber.

Examiner appears to have interpreted our argument, that there is no evidence that Kraft et al. teach nitridation and annealing in the same chamber, as a statement to the effect that the present invention teaches a single chamber process.

(2) Examiner states " ...Kraft does teach that the same gases in the nitridation process are present in the annealing step since in column 5, lines 9 - 17, Kraft states that those two process are carried out one immediately after the other.

Appl. No. 10/091/983
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Column 5, lines 9 - 17, of Kraft read as follows:

"In both step 504 of FIG. 4a and step 503 of FIG. 4b, substrate bias, length (in time) of exposure to the plasma, plasma power, and use of a post nitridation anneal can be altered/used so as to either drive the nitrogen further into or not drive as far into the insulating layer or the underlying semiconductor structure and repair any dielectric and/or substrate damage. In addition, a low density plasma or a high density plasma may be used depending on the amount of drive-in that is required for the nitrogen."

Although, by definition, a post nitridation anneal must take place after the nitridation process, we have been unable to find, in the above quotation, any implication, let alone a clear statement, that the anneal must take place immediately following the nitridation. Since it is certainly possible that we have misunderstood what Examiner has in mind, further clarification from him would be appreciated.

(3) In refuting our argument that Kraft's gas does not contain oxygen, Examiner states "...Kraft clearly states that there is "very little oxygen" and that the nitrogen amount "exceeds the amount of oxygen." This is stated on column 4, lines 15 - 20."

Column 4, lines 15 - 20 says nothing about the composition of any gas in which one might perform a post nitridation anneal. Rather, it is making reference to several layers that comprise Kraft's structure. Specifically, it teaches that layer 14 is made up of portions (or sublayers) 20 and 18, both of which contain both nitrogen and oxygen. These layers are formed during plasma processing (step 504 in FIG. 4a), i.e. during nitridation (see column 3, lines 59-62) and it is here, not during a possible post nitridation anneal, that an atmosphere containing both nitrogen and oxygen is used.

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In summary, Kraft provides no information on how to perform a post nitridation anneal. In fact, Kraft's only mention of such an anneal occurs in line 11 of column 5 where he notes that it can be used.

Respectfully submitted,

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